

## PATENT ABSTRACTS OF JAPAN

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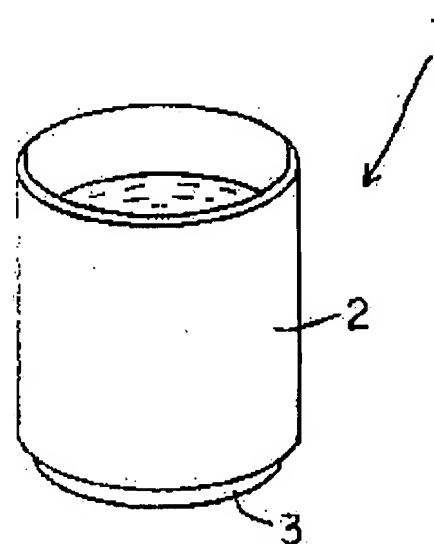
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## (54) TABLEWARE

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide tableware capable of obtaining essential taste of food and drink.

SOLUTION: This is a teacup 1 provided with a cylindrical body part 2 whose lower end is blocked and an annular rim of the bottom part 3 formed integrally at a lower end of the main part 2, and the body part 2 and the rim of the bottom part 3 are formed with a photocatalyst. When tea is put in the body part 2, dirt and odor are decomposed and removed due to the excitation of photocatalyst by means of light energy, even if the dirt and odor remain on an inner face of the body part 2, so that essential taste of tea is not lost due to the adhesion of the dirt and odor on tea and antibacterial action is obtained.



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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the tableware which can demonstrate an antibacterial action while the taste of ingesta original is especially obtained about tableware.

[0002]

[Description of the Prior Art] There are a teacup, a pan, a teacup, a cop, a coffee cup, a teacup, a muddler, chopsticks, a knife, a spoon, a fork, etc., and these are used, and he can eat boiled rice, meat, a fish, etc., water, tea, sake, whiskey, wine, tea, coffee, etc. can be drunk, or it can be made tableware.

[0003] however, cutting or stabbing, when using the above tableware, eat boiled rice, meat, a fish, etc., drinking water, tea, sake, whiskey, wine, tea, coffee, etc. or carrying out \*\*\*\* -- etc. -- if it carries out, since the dirt and smell are attached to ingesta, the taste of ingesta original will be lost. [ putting in ingesta in dirt or the condition that that it is stinking etc. remains, on the surface of tableware ] [ hold ]

Moreover, there was a possibility that the residue arises depending on the degree of washing, saprophytic bacteria might be generated by this and the case where a health top is not good might arise.

[0004] cutting or stabbing \*\*\*\* -- etc. -- even if it carries out, while the taste of ingesta original is not lost, it aims at offering the tableware which can demonstrate an antibacterial action. [ this invention solving the trouble which the above conventional things have, and putting ingesta into a front face in dirt or the condition that that it is stinking etc. remains ] [ hold ]

[0005]

[Means for Solving the Problem] In order to solve the above-mentioned trouble, this invention is tableware used in case food is eaten or a drink is drunk, and adopts the means which formed the contact section with ingesta with the photocatalyst at least. And it forms with titanium oxide or the means which formed said photocatalyst with titanium oxide, and copper, a copper compound or platinum is adopted.

[0006]

[Function] It will be decomposed and removed by photocatalyst functions, such as titanium oxide, being [ which remains in the front face by having adopted the above means ] dirt, that this invention is stinking, etc.

[0007]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention shown in a drawing is explained. The gestalt of operation of the 1st of the tableware by this invention is shown, and the tableware 1 by the gestalt of this operation is the teacup 1 used in order to drink tea etc., and equips drawing 1 with the tubed body section 2 by which the soffit was blockaded, and the annular yarn end section 3 formed in the soffit of the body section 2 at one.

[0008] The body section 2 and the yarn end section 3 are formed from titanium oxide. Titanium oxide has a photocatalyst function (oxidation reaction). In light energy, semi-conductors, such as carrier beam titanium oxide, are what causes a catalysis, and the photocatalysis is known as a photocatalyst with the most leading titanium oxide also in various semi-conductors.

[0009] And when titanium oxide excites with light energy, the dirt adhering to a front face, a smell, etc.

will be decomposed and removed powerfully. Even if it is the case (1 mW/cm<sup>2</sup> the following level) where light energies are the natural light and a feeble light of a fluorescent lamp, dirt, a smell, etc. can fully be decomposed. And an antibacterial action can be demonstrated by oxidation reaction.

[0010] And though dirt, a smell, etc. have adhered to the front face when putting tea etc. into the teacup 1 which consists of the above titanium oxide, they will be decomposed and removed when titanium oxide excites with light energy. Therefore, antibacterial is carried out, while it is lost that dirt, a smell, etc. are attached to the tea put into the teacup 1 and original tastes, such as tea, are obtained.

[0011] The gestalt of other operations of the tableware by this invention is shown in drawing 2. The tableware 4 shown in the gestalt of this operation is a coffee cup 4, and is equipped with the tubed body section 5 by which the soffit was blockaded, the annular yarn end section 6 prepared in the soffit of the body section 5 at one, and the half-annular bundle hand part 7 prepared in the outside surface of the body section 5 at one.

[0012] In this case, the body section 5, the yarn end section 6, and the bundle hand part 7 are formed from titanium oxide like what is shown in the gestalt of said 1st operation.

[0013] And though dirt, a smell, etc. have adhered to the front face when putting coffee into the coffee cup 4 of the above configurations, they will be decomposed and removed when titanium oxide excites with light energy. Therefore, antibacterial is carried out, while the taste of coffee original is obtained so that dirt, a smell, etc. may not be attached to the coffee put into the coffee cup 4.

[0014] The gestalt of operation of the 3rd of the tableware by this invention is shown in drawing 3. The tableware 8 shown in the gestalt of this operation is a muddler 8, and is formed from titanium oxide like what is shown in the gestalt of said 1st operation.

[0015] And with this muddler 8, when tea, coffee, etc. which were put into the teacup which consists of pottery etc., the coffee cup, etc. are stirred, it will be decomposed with the titanium oxide of a muddler 8, and the dirt adhering to a teacup, a coffee cup, etc., a smell, etc. will be removed. Therefore, dirt, a smell, etc. will not be attached to tea, coffee, etc. which were put into the teacup, the coffee cup, etc., and original tastes, such as tea and coffee, will be obtained.

[0016] In addition, in the aforementioned explanation, although the whole tableware was formed with titanium oxide, it is the thing of tableware which may form the contact section with ingesta with titanium oxide at least. Moreover, since oxidation reaction and a reduction reaction are the relation of 1 to 1, unless a reduction reaction functions, oxidation reaction does not function. For this reason, much more photocatalyst operation will be demonstrated by copper, the copper compound, and using platinum etc. with titanium oxide further as a photocatalyst so that a reduction reaction may be promoted. on the other hand, although the teacup 1, the coffee cup 4, and the muddler 8 were mentioned as tableware, even if it is the case where other tableware, for example, a pan, a kettle, a teacup, a pan, a cop, chopsticks, a knife, a spoon, a fork, etc. are formed with titanium oxide, it comes out not to mention the same effectiveness being acquired.

[0017]

[Effect of the Invention] Though being dirt, that it is stinking, etc. remain in tableware by having constituted this invention as mentioned above and having formed the contact section with the ingesta of tableware with photocatalysts, such as titanium oxide, it will be decomposed and removed by the property of the photocatalyst of titanium oxide that being dirt, that it is stinking, etc. Therefore, while it will be lost that dirt and a smell are attached to ingesta and the taste of ingesta original will be obtained, the outstanding effectiveness that the antibacterial action which a photocatalyst has is demonstrated is done so.

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[Translation done.]